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MSL934008 Maintain and calibrate instruments and equipment
MSL934009 Apply Quality Systems and Continuous Improvement Processes

Role and importance of regular calibration checks and maintenance of instruments and equipment, and maintenance schedules and procedures

1) Reason/importance of regular calibration checks?

2) Who is responsible to do the calibration checks, calibrations or maintenance on laboratory equipment?
Technician
3) Importance of implementing and maintaining an equipment maintenance/calibration schedule?
Visual aid of what's been done or not
4) List 3 reasons why Work Instructions (WI) and Standard Operating Procedures (SOPs) are important.

5) List x3 consequences if we do not do regular maintenance
Turn around time
Not working properly
Safety issues
Breach of job duties

Session 2 & 3 learning material

NATA guides: Equipment assurance, in-house calibration and equipment verification

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Purpose and importance of using certified reference standards or devices

6) List reasons Certified Reference Materials (CRM) are

a. used and

Standardisation
Verification of Accuracy
Calibration
Quality Control

b. importance.

Accuracy/Quality Assurance
Compliance
Continuous Improvement

Session 2 & 8 learning material
QAQC plan

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Workplace procedures for recording data and reporting results

7) Where is calibration data and results recorded? Between paper, documents, worksheets, LIMBS

8) What information should an Equipment Logbook have?

Dates of service reports, equipment checks

9) Procedure/system for reporting results?

Session 6 learning material

Equipment maintenance and repair
Document Number: WI-001

Equipment manuals and warranties

10) What are equipment manuals and why are they important?

11) Consequence of doing repairs on equipment that is under warranty?

12) What do you do when equipment has **failed** its calibration?

Session 3, 4, 5 & 6 learning material

Work Instructions for Analytical Balance and POVA

Basic equipment cleaning, maintenance, scheduling and storage procedures for items of equipment used

13) List the cleaning, maintenance, scheduling, and storage procedures that are performed on a piece of equipment of your choice. (POVA, Balance, pH meter and Microscope)

- Cleaning
- Maintenance
- Storage
- Schedule

Session 3, 4, 5 & 6 learning material

Sources of uncertainty in instrument or equipment operation and their control

14) For

I. Analytical Balance — Session 3, 4/5, 6 & 7 learning material

II. POVA — Work Instructions for Analytical Balance and POVA

III. Volumetric Flasks

- List Two (2) sources contributing to uncertainty (for each listed above) and how it can be managed

Common sources of faults in the instruments or equipment used and details of their repair

15) List 2 Common sources of faults and repair for each fault.

- Damage or malfunction or distortion.
- Electrical/ Electronic Component Failure

Refer to instrument manuals

Common laboratory instruments and equipment requiring calibration checks, and the function of key components, including operating principles, details of the pre-use, calibration and safety checks, and operating procedures

16) Analytical Balance SOP – brief overview of the procedure for,

a. Function of key components
b. Pre-use checks
c. Safety checks
d. Calibration checks
e. Operation

Typical calibration status checks

17) List typical calibration status checks for

- POVA
- Ovens
- Timers
- pH meter

Session 3 learning material

NATA General equipment table

Environmental sustainability issues as they relate to the work task

18) Identify 3 environmental sustainability issues related to working with lab instruments/equipment

19) Equipment off, waste disposal

Legal, ethical, and work health and safety (WHS) requirements specific to the work task.

19) Explain the legal, ethical and WHS requirements of a Calibration and Maintenance technician-

a. Legal:

b. Ethical:

c. WHS:

Session 6 learning material

Process involved in arranging calibration, repair and/or maintenance of equipment including assessment of instrument repair status and determining if local repair or maintenance is possible and economical.

Refer to WI-001 Equipment maintenance and repair

20)

a. Describe the steps you would take to arrange calibration, repair, or maintenance for equipment.

b. How do you select an appropriate a service agent, or personnel

c. What criteria should you consider when evaluating the qualifications of the service agent or personnel?

d. how you ensure that the service or repair performed meets the requirements?

e. Outline the steps you would take to verify and document the service/repair completion.

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21) Provide an example of a procedure/system for each of the following,

a. Recording data and

b. Reporting results.

and explain on how each would be applied.

Calibration check data procedure performed in Balances, POVA & Volumetric flasks

Session 6 & 9 Learning material